WHAT IS CLAIMED IS:

1. A control apparatus for a fuel cell stack comprising:

a fuel cell stack having a stacked body formed by stacking fuel cell units together and a pair of end plates sandwiching the stacked body therebetween;

electrical heaters disposed near the ends of the stacked body or the end plates, respectively;

a water purging device for purging water which is generated during a power generation operation in the fuel cell stack, and which is held in the fuel cell units; and

a control unit which controls the power generation operation in the fuel cell stack, and which is operatively connected to the electrical heaters and the water purging device, wherein

the control unit is adapted to operate the electrical heaters and the water purging device when the power generation operation is stopped.

2. A control apparatus for a fuel cell stack according to claim 1, wherein the control unit is adapted to operate the electrical heaters and the water purging device prior to stopping of the power generation operation.

3. A control apparatus for a fuel cell stack according to claim 1, wherein the control unit is adapted to operate the electrical heaters first, and then to operate the water purging device when a predetermined time has passed since the beginning of operation of the electrical heaters.

4. A control apparatus for a fuel cell stack according to claim 1, wherein the control

unit is adapted to simultaneously operate the electrical heaters and the water purging device.

5. A control apparatus for a fuel cell stack according to claim 1, wherein each of the electrical heaters is disposed between each of the end plates and one of the fuel cell units disposed at each end of the fuel cell stack.

6. A control apparatus for a fuel cell stack according to claim 1,

wherein the fuel cell stack further includes a pair of terminal plates each of which is disposed between each of the end plate and one of the fuel cell units disposed at each end of the fuel cell stack, and

wherein each of the electrical heaters is embedded in each of the terminal plates.

7. A control apparatus for a fuel cell stack according to claim 1,

wherein the fuel cell stack further includes a pair of terminal plates, each of which is disposed between each of the end plate and one of the fuel cell units disposed at each end of the fuel cell stack, and a pair of electrical insulators each of which is disposed between each of the end plates and each of the terminal plates, and

wherein each of the electrical heaters is disposed between each of the terminal plates and each of the electrical insulators.

8. A control apparatus for a fuel cell stack according to claim 1, wherein each of the electrical heaters is embedded in each of the end plates.

9. A control apparatus for a fuel cell stack according to claim 1, wherein the control

unit is adapted to execute the power generation operation in the fuel cell stack in order to supply electrical energy to the electrical heaters.

10. A control apparatus for a fuel cell stack according to claim 1, wherein the water purging device comprises:

a compressor which is connected to an end of the fuel cell stack for supplying gas for water purging into the fuel cell units, and which is operatively connected to the control unit; and

a purging valve which is connected to the other end of the fuel cell stack for regulating flow of water purged from the fuel cell units, and which is operatively connected to the control unit.

11. A control apparatus for a fuel cell stack according to claim 1, further comprising temperature sensors for measuring temperature of the fuel cell units, wherein

the control unit is adapted to control the electrical heaters depending on the temperature of the fuel cell units measured by the temperature sensors.

12. A control apparatus for a fuel cell stack according to claim 11, wherein one of the temperature sensors is attached to one of the fuel cell units disposed in the middle of the fuel cell stack, and at least one of the temperature sensors is attached to at least one of the fuel cell units disposed near ends of the fuel cell stack.

13. A control apparatus for a fuel cell stack according to claim 12, wherein the control unit is adapted to control the electrical heaters depending on the difference between the temperature of at least one of the fuel cell units disposed in the middle of the fuel cell stack

and the temperature of at least one of the fuel cell units disposed at the ends of the fuel cell stack.

14. A method for controlling a fuel cell stack assembly, which comprises a fuel cell stack having a stacked body formed by stacking fuel cell units together and a pair of end plates sandwiching the stacked body therebetween; electrical heaters disposed near the ends of the stacked body or the end plates, respectively; and a water purging device for purging water which is generated during a power generation operation in the fuel cell stack, and which is held in the fuel cell units, the method comprising the steps of:

receiving a power generation stop command;

operating the electrical heater for warming the fuel cell units disposed at ends of the fuel cell stack;

operating the water purging device for purging the water held in the fuel cell units; and

stopping the power generation in the fuel cell stack.

15. A method for controlling a fuel cell stack assembly, which comprises a fuel cell stack having a stacked body formed by stacking fuel cell units together and a pair of end plates sandwiching the stacked body therebetween; electrical heaters disposed near the ends of the stacked body or the end plates, respectively; and a water purging device for purging water which is generated during a power generation operation in the fuel cell stack, and which is held in the fuel cell units, the method comprising the steps of:

receiving a power generation stop command;

operating the electrical heater for warming the fuel cell units disposed at ends of the fuel cell stack and the water purging device for purging the water held in the fuel cell

units, simultaneously; and

stopping the power generation in the fuel cell stack.